IN THE CLAIMS:

Please add new claims 34, 35 and 36 as set forth below. The accompanying transmittal letter authorizes charging of the corresponding excess-claim fees to Hewlett-Packard deposit account 08-2025.

Applicants respectfully ask that these three new claims be inserted to immediately follow original claims 1, 9, and 25 respectively.

1. (original) Apparatus for printing a desired image on a printing medium, based upon input image data, by construction from individual marks formed in a pixel grid; said apparatus comprising:

at least one multielement incremental-printing array that is subject to colorant-deposition error;

means for measuring such colorant-deposition error of the at least one array;

means for modifying a multicolumn, multirow numerical tabulation that forms a mapping between such input image data and such marks, to compensate for the measured colorant-deposition error; and

means for printing using the modified mapping.

2. (original) The apparatus of claim 1, wherein the mapping is selected from the group consisting of:

an optical-density transformation of the image data to such construction from individual marks; and

a spatial-resolution relationship between the image data and such pixel grid.

3. (original) The apparatus of claim 2, wherein:

the optical-density transformation comprises a halftoning matrix; and

the spatial-resolution relationship comprises a scaling of the image data to such pixel grid.

4. (original) The apparatus of claim 1, wherein:

said at least one multielement incremental-printing array comprises a plurality of multielement printing arrays that print in a corresponding plurality of different colors or color dilutions, each multielement printing array being subject to a respective colorant-deposition error; and

the measuring means and the mapping-modifying means each operate with respect to each one of the plurality of multielement printing arrays respectively.

5. (original) The apparatus of claim 4, wherein:

for at least one of the plurality of multielement printing arrays, the colorant-deposition error comprises a respective pattern of printing-density defects; and wherein:

the measuring means comprise means for measuring the pattern of printing-density defects for each multielement printing array respectively; and

the modifying means comprising means for applying the respective pattern of defects, for at least one of the multielement printing arrays, to modify a respective said mapping.

6. (original) The apparatus of claim 4, wherein:

for at least one of the plurality of multielement printing arrays, the colorant-deposition error comprises a swath-height error;

the measuring means comprise means for measuring the swath-height error for each multielement printing array respectively; and

the modifying means comprise means for applying the respective swath-height error, for at least one of the multielement printing arrays, to modify a respective said mapping.

7. (original) The apparatus of claim 1, wherein:

the colorant-deposition error comprises a pattern of printing-density defects;

the measuring means comprise means for measuring the pattern of printing-density defects;

the modifying means comprise:

means for deriving a correction pattern from the measured pattern of printing-density defects, and

means for applying the correction pattern to modify a halftone thresholding process; and

the printing means comprise means for printing such image using the modified halftone thresholding process.

8. (original) The apparatus of claim 1, wherein:

the colorant-deposition error comprises a swath-height error or otherwise corresponds to a optimum distance of printing-medium advance;

the measuring means comprise means for measuring the swath-height error or determining the optimum distance;

the modifying means comprise:

means for deriving a correction pattern from the measured swath-height error or determined optimum distance, and

means for applying the correction pattern to modify a halftone thresholding process; and

the printing means comprise means for printing such image using the modified halftone thresholding process.

9. (original) A method of printing a desired image, by construction from individual marks formed in a pixel grid by at least one multielement printing array that is subject to a pattern of printing-density defects; said method comprising the steps of:

measuring such pattern of printing-density defects;

deriving a correction pattern from the measured pattern of printing-density defects;

applying the correction pattern to modify a halftone thresholding process; and

printing such image using the modified halftone thresholding process.

10. (original) The method of claim 9, for use with a printmask in plural-pass printing, and further comprising the steps of, before or as a part of the applying step:

using such printmask to determine a relationship between the halftone matrix and the multielement array; and

employing the relationship in the applying step to control application of the correction pattern to the halftone matrix.

11. (original) The method of claim 9, wherein:

the printing step comprises single-pass printing.

12. (original) The method of claim 9, for use with said at least one multielement incremental-printing array that comprises a plurality of scanning multielement printing arrays that print in a corresponding plurality of different colors or color dilutions, each multielement printing array being subject to a respective swath-height error; and wherein:

the measuring, deriving, applying and printing steps are employed to modify swath height of at least one of the scanning multielement printing arrays, for accommodating any swath-height error present in each multielement printing array respectively.

13. (original) The method of claim 9, for use with said at least one multielement incremental-printing array that comprises a plurality of multielement printing arrays that print in a corresponding plurality of different colors or color dilutions, each multielement printing array being subject to a respective pattern of printing-density defects; and wherein:

the measuring, deriving, applying and printing steps are each performed with respect to each multielement printing array respectively.

14. (original) The method of claim 13, for use with such plurality of multielement incremental-printing arrays that are also each subject to a respective swath-height error; and wherein:

the measuring, deriving, applying and printing steps are also employed to modify swath height of at least one of the multielement printing arrays, for accommodating any swath-height error present in each multielement printing array respectively.

15. (original) The method of claim 9, wherein:

the halftone thresholding process comprises definition of a halftone matrix.

16. (original) The method of claim 9, wherein:

the halftone thresholding process comprises an error-diffusion protocol.

17. (original) The method of claim 16, wherein the error-diffusion protocol comprises at least one of:

a progressive error-distribution allocation protocol of such error-diffusion halftoning; and

a decisional protocol for determining whether to mark a particular pixel.

18. (original) The method of claim 9, wherein:

the applying step comprises replacing values above or below a threshold value.

19. (original) The method of claim 9, wherein:

the applying step comprises multiplying values by a linear factor.

20. (original) The method of claim 9, wherein:

the applying step comprises applying a gamma correction function to values.

21. (original) The method of claim 9, wherein the modifying step comprises a combination of at least two of:

replacing values above or below a threshold value;

multiplying each values by a linear factor; and

applying a gamma correction function to values.

22. (original) The method of claim 9, wherein:

for each of the plurality of multielement arrays, the measuring, deriving and applying steps are each performed at most only one time for a full image.

23. (original) The method of claim 9, wherein:

the applying step comprises modifying the darkness of substantially each mark printed by an individual printing element whose density is defective.

24. (original) The method of claim 9, wherein:

the applying step comprises modifying the average number of dots printed by an individual printing element whose density is defective.

25. (original) A method of printing a desired image, based on input image data, by construction from individual marks formed in a pixel grid by at least one scanning multielement printing array; said printing being subject to print-quality defects due to departure of printing-medium advance from an optimum value; said method comprising the steps of:

measuring a parameter related to such print-quality defects;

based on the measured parameter, scaling such input image data to compensate for said departure; and

printing such image using the scaled input image data.

26. (original) The method of claim 25, wherein:

the parameter comprises such print-quality defects; and

the measuring step comprises measuring such print-quality defects.

27. (original) The method of claim 26, wherein:

the defects comprise swath-height error; and

the measuring step comprises measuring swath-height error.

28. (original) The method of claim 26, wherein:

the defects comprise area-fill nonuniformity; and

the measuring step comprises:

using a sensing system to measure area-fill non-uniformity for plural printing-medium advance values, and

selecting a printing-medium advance value that corresponds to minimum area-fill nonuniformity.

29. (original) The method of claim 25, wherein:

the parameter comprises such optimum value; and

the measuring step comprises determining such optimum value.

30. (original) The method of claim 25, for use with said at least one scanning multielement printing array that comprises a plurality of multielement printing arrays that print in a corresponding plurality of different colors or color dilutions, each multielement printing array being subject to a respective swath-height error; wherein:

the measuring, scaling and printing steps are each performed with respect to each multielement printing array respectively.

31. (original) The method of claim 30, wherein the printing step comprises:

comparing optimum advance values or swath-height values measured for the plurality of multielement printing arrays respectively, to find the smallest of said values;

selecting a particular multielement printing array whose said value is substantially the smallest;

using, in common for the plurality of printing arrays, substantially said selected smallest value; and

for substantially each array other than the particular array, operating with a respective reduced number of printing elements and with rescaled data, to match an actual effective swath height of the particular array.

32. (original) The method of claim 31, wherein:

said smallest of said values is determined taking into account the maximum available number of printing elements in the corresponding array.

33. (original) The method of claim 25, further comprising the step of:

after the scaling step, iterating the measuring and scaling steps to allow for nonlinearity in such print-quality defects.

34. (new) The apparatus of claim 1, wherein:

the multielement printing array is an inkjet printhead.

35. (new) The method of claim 9, wherein:

the multielement printing array is an inkjet printhead.

36. (new) The method of claim 25, wherein:

the multielement printing array is an inkjet printhead.